To: Chief, Design Section

From: [redacted] Project Group

Subject: Present Status of CK-14 Project

1. The attached information may be of value in clarifying the capabilities and potentials of the [redacted] although not all of it may be of interest to other than R&D Lab personnel. It contains a philosophy of design, principle of operation, present status, and courses the development will follow if approval can be obtained. 50X1

2. [redacted] has been consulted on the general production development. It is felt that the plan of one production prototype before production will be of great assistance in ironing out the remaining problems of both development and production, at minimum expense. 50X1

3. The tests and experimentation planned for the engineering prototype when it returns must be completed in the main before ernest work on the production prototype can be started. Since almost anything is likely to develop in the cold chamber, including hard-to-replace component failures, it is hard to foresee the time required. Two hundred man-hours is a wild guess.

4. Some development work is bound to be necessary on the production prototype before it is complete. This will result in perhaps one drafting layout for a module being scrapped and replaced. The limitation to one production prototype will prevent this being an excessive burden. The engineering prototype will be utilized for any experimentation wherever possible.

5. Wild-guess estimates of prototype man-hours are:

Drafting 160 hours

Fabrication 600

RECEIVE cir.100

Shop: not yet estimated

ILLEGIB

(add to Principle of Operation)

In the RECEIVE position of the function switch, the [redacted] prototype is programmed for message reception according to the following plan. Some connections remain to be made, and the principle remains to be tested, but the circuit programming does function properly. 50X1

A transistor switch, controlled by the audio output of a receiver, flips the control flip-flop, resulting in a first clock pulse 11 milliseconds later. The ring counter fires with the clock, at 22 millisecond intervals thereafter; its seventh stage resets the control flip-flop, shutting off the clock, and the circuit awaits the next start pulse. The ring counter stages two through six can send currents gated by the transistor switch to the five cores of the keyboard matrix. Information stored in these cores is then fed to the sense amplifiers (as with TYPE). It is seen that this operation is equivalent in many respects to conventional mechanical start-stop operation with strobing of the received signal, and has similar or better speed margins.